

Certified Safety: New Biocompatible Igus Ball Bearing Material For Medical Technology

xiros MT180 complies with most stringent safety standards and reduces certification costs for medical technology products

STAMFORD, CT, USA, February 20, 2023 /EINPresswire.com/ -- The global leader in motion plastics, igus®, is expanding its range of high-performance plastics for medical technology. New to the product range: xiros® [MT180](#), a material for light, hygienic, dry-running deep groove ball bearings. The new material is certified according to the strictest biocompatibility standards, such as USP Class VI and DIN EN ISO 10993, and puts medical technology manufacturers, such as bio-reactors, on the safe side and saves time and money for product approval.

In medical and pharmaceutical technology, machine and plant engineers are increasingly replacing metal components with counterparts made of high-performance plastic. The advantage is that igus xiros series ball bearings operate without lubrication and are maintenance-free while remaining low-friction and hygienic. A common difficulty is that not all plastics are suitable for all medical-technology applications. So far, manufacturers have often had to plan time and costs for new assembly certification.



With their certified biocompatibility, ball bearings made from xirodur MT180 are suitable for laboratory equipment, X-ray robots, bio-reactors, and magnetic resonance imaging applications. (Source: igus GmbH)

"We invest lots of energy in research and development. That way, we bring materials to the market that are certified according to the strictest standards in the world – materials that medical-technology manufacturers can use without hesitation," says Marcus Semsroth, Head of Business Unit xiros Polymer Ball Bearings at igus. "One of our latest developments is xiros MT180, a biocompatible material from which light, hygienic, non-magnetic xiros deep groove ball bearings can be manufactured."

xiros MT180: approved even for contact with the bloodstream

The new ball bearings made of xiros MT180 are ideally suited for applications in medical technology, such as bio-reactors, which cultivate microorganisms in a nutrient medium. These reactors were vital in producing RNA vaccines during the COVID-19 pandemic. The ball bearings can be used, for example, in the agitator. They are classified according to USP 88 Class VI. The USP (United States Pharmacopeia) is an independent organization that sets quality, purity, and strength standards for medicines, food ingredients, and other products sold in the United States. This classification proves that the igus ball bearings do not pose the risk of contamination.

"Our new material xiros MT180 has thus reached the highest biocompatibility class," says Semsroth. "In this class, the material is approved even for contact with the bloodstream. It could, therefore, be used in medical implants. The material also complies with DIN EN ISO 10993 for medical products."

Suitable for prostheses, laboratory equipment, and hospital beds

The single-row xiros deep groove ball bearings made of high-performance plastic belong to the rolling bearings family. They consist of four components: an inner and outer race, a cage, and the load balls.

Cage and races are injection-molded from xiros MT180. The balls can be made of stainless steel or glass as desired. The bearings are entirely non-magnetic and electrically insulating when glass balls are used. This makes them suitable for magnetic resonance imaging (MRI). This method uses a pulsating magnetic field in accordance with USP 88 to make the inside of the body visible layer by layer. Since the magnetic field is many thousands of times stronger than the earth's magnetic field, conventional metal rolling bearings cannot be used.

"Ball bearings made of xiros MT180 are suitable not only for bio-reactors and MRIs but also for prostheses and orthoses, X-ray robots, laboratory equipment, and hospital beds," says Ulf Hottung, Medical Technology Industry Manager at igus.

Semsroth adds: "The ball bearings are made of high-performance plastic, so they are not only resistant to corrosion and dirt, but also up to 50% lighter and very durable. To ensure quality and safety, we put each of our ball bearings through their paces in our in-house test laboratory."

Learn more about igus grease-free and hygienic plastic solutions for medical equipment here:
<https://www.igus.com/info/industries-medical>

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